# Distributed Generation in the Grid of the future

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### The E&TS Vision

 "Engineering, technical and business excellence to achieve perfect safety and reliability at less than today's delivery cost."







# SCE's Customer Generation Base has Expanded Since 1998

	Interconnections as of 12/31/03		Projects in Development	
Technology	Number of Projects	Total kW	Number of Projects	Total kW
Microturbines	41	6,486	15	2,547
Gas Turbines	1	1,770		
Internal Combustion Engines (< 5,000 kW)	75	83,025	59	51,278
Large Projects (IC-GT ≥ 5,000 kW)	7	99,296	4	39,691
Fuel Cells	2	10	1	416
Small Hydro	1	643		
Combined Technologies (PV/GT)	3	8,555		
Solar (PV & Wind) (includes NEM)	1,937	12,742	196	1,930
Total	2,067	212,527	275	95,862





#### Where DG can make sense

- CHP (Combined Heat and Power)
- "Free" energy
  - Landfills, Process gas
  - Solar, Wind, Small Hydro
- Remote Location
- Peak shaving w/Standby DG
- To defer large distribution up grades
- Emergency power assurance





## DG Challenges

 Finding a "win-win" strategy for both the DG user, other customers, and the utility

Integration of DG communication and control into a utility system

Load assurance requirement





## SCE & DG - going forward

#### Formed a DG Team within T&D to:

- Ensure that T&D planning incorporates DG
- Continue leading role in testing and evaluation
- Provide mitigation measures for overloaded distribution equipment





- SCE facilitates the interconnection of customer generation to its grid
- SCE offers a reasonable & expeditious interconnection process
- SCE interconnection rules have been standardized and streamlined under California Rule 21



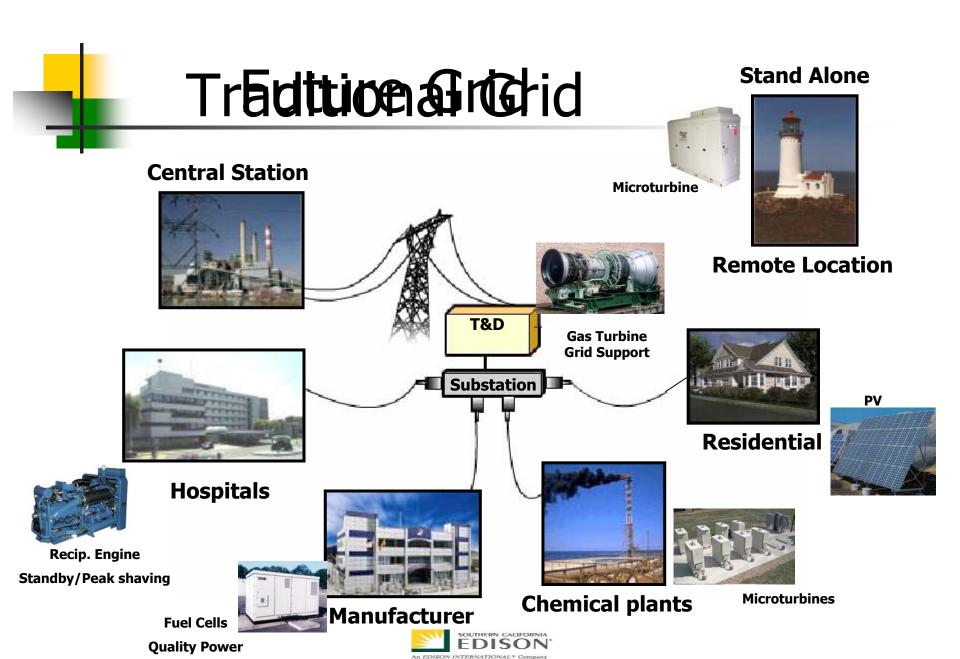
# SCE and DG – going forward (Summary)

SCE supports DG when it is:

Economically Sound

Environmentally sound







## **Future Grid**

- More reliable
- Safer
- Improved economy
- Better power quality
- Environmentally responsible





## Q&A

